In the Claims:

1. (Amended) A method for the wireless data transmission using at least one transmitter and at least one receiver, the receiver having one or more receiving antennas comprising:

utilizing information on received interference signals to improve the quality of transmission of the data transmission;

obtaining quantitative information about received user signals from the received signals of one of the antennas by using a first signal processing algorithm; and

obtaining quantitative information about the received interference signals from the received signals of one of the antennas and the quantitative information obtained about the received user signals by using a second signal processing algorithm wherein the quantitative information about the received interference signals is used to generate a directional pattern at the transmitter.

2. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm provides an estimate of the transmitted user data.

3. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm provides an estimate of the characteristics of the radio channels operating between the transmitters and the receiver.

4. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes algorithms to reconstruct the user signals received from the receiving antennas by the quantitative information obtained about the signals.

5. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes a weighted or unweighted subtraction of the reconstructed received user signals from the total received signals.

Please cancel claims 6 and 7.

8. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes a forming of the spatial covariance matrix of the received interference signals.

9. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes a forming of the temporal covariance functions of the received interference signals at each of the antennas.

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10. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes a forming of the total covariance functions of the received interference signals.

11. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes an estimating of the spatial, temporal and/or total covariance functions by finite temporal averaging over the received interference signals.

12. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes an estimating of the directions of incidence of the interference.

13. (Amended) The method as claimed in claim 1, wherein the second signal processing algorithm includes an estimating of the power and/or the spectral shape of the interference.

Please cancel claims 14 and 15.

16. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm includes a forming of the spatial covariance matrix of the received user signals.

17. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm is based on the principle of a single user detection in the case of data transmission.

18. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm is based on a principle of multi-user detection in the case of data transmission.

19. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm is based on a principle of a rake receiver in the case of data transmission.

20. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm includes forward error correction decoding at the receiver end during data transmission.

21. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm is based on a principle of the zero-forcing algorithm.

22. (Amended) The method as claimed in claim 1, wherein the first signal processing algorithm is based on a principle of maximum-likelihood estimation or minimum mean square error estimation.

Please cancel claims 23-26.

27. (New) A system for wireless data transmission, comprising:

a receiver having one or more receiving antennas utilizing information on received interference signals to improve the quality of transmission of the data transmission, wherein

quantitative information is obtained about received user signals from the received signals of one of the antennas by using a first signal processing algorithm, and

the quantitative information about the received interference signals is obtained from the received signals of one of the antennas and the quantitative information obtained about the received user signals by using a second signal processing algorithm wherein the quantitative information about the received interference signals is used for generating a directional pattern at the transmitter; and

a transmitter to generate a directional pattern based on the quantitative information about the received interference signals.

~~Please delete lines 1-9 on page 17.~~ deleted

In the Abstract:

Please replace the Abstract in its entirety with the Abstract attached hereto.